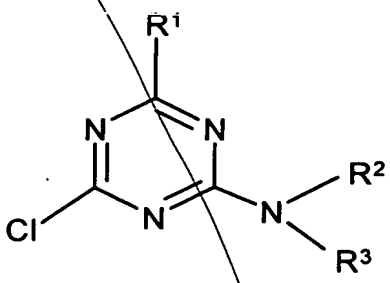
1. A process for the preparation of compounds of the formula (I) or salts thereof



(I)

in which

R^1 is (C_1-C_8)alkyl or (C_3-C_8)cycloalkyl, where each of the two above radicals independently of one another is unsubstituted or substituted,

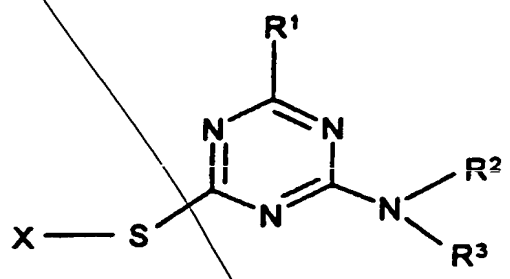
and

R^2, R^3 in each case independently of one another are hydrogen, amino, hydroxyl, formyl or unsubstituted or substituted (C_1-C_8)alkyl, (C_1-C_8)alkylamino, di[(C_1-C_8)alkyl]amino, (C_1-C_8)alkyloxy, aryl, aryloxy, (C_3-C_8)cycloalkyl, [(C_1-C_8)alkyl]carbonyl, [(C_1-C_8)alkoxy]-carbonyl, arylcarbonyl, aryloxycarbonyl, (C_1-C_8)alkylsulfonyl, arylsulfonyl or an unsubstituted or substituted heterocyclyl radical, heterocyclyloxy radical, heterocyclylamino radical, each of which has 3 to 6 ring atoms and 1 to 3 hetero ring atoms selected from the group consisting of N, O and S, or

R^2, R^3 together with the nitrogen atom of the group NR^2R^3 are a heterocyclic radical having 3 to 6 ring atoms and 1 to 4 hetero ring atoms, where, in addition to the nitrogen atom, the other hetero ring atoms which may exist are selected from the group consisting of N, O and S and the heterocycle is unsubstituted or substituted,

which comprises converting 2-amino-4-thio-1,3,5-triazines of the general

formula (II)



(II)

in which X represents hydrogen, (C_1-C_6)alkyl, (C_2-C_6)alkenyl, (C_2-C_6)alkynyl or phenyl, where each of the last-mentioned 4 radicals is unsubstituted or substituted, or represents a 2-amino-4-thio-1,3,5-triazine radical which is bonded via sulfur and equally substituted
by chlorination into the compound (I).

2. The process as claimed in claim 1, wherein

R^1 is (C_1-C_8)alkyl or (C_3-C_8)cycloalkyl, where each of the two abovementioned radicals independently of one another is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, (C_1-C_8)alkoxy, (C_1-C_8)alkylthio, (C_1-C_8)alkylsulfinyl, (C_1-C_8)alkylsulfonyl, [(C_1-C_8)-alkyl]carbonyl, [(C_1-C_8)alkoxy]carbonyl, (C_2-C_8)alkenyl, (C_2-C_8)alkynyl, (C_3-C_8)cycloalkyl, phenyl and, in the case of cycloalkyl, also (C_1-C_8)alkyl, each of the last-mentioned 11 radicals being unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C_1-C_4)alkoxy, (C_1-C_4)alkylthio and, in the case of cyclic radicals, also (C_1-C_4)alkyl and (C_1-C_4)haloalkyl.

3. The process as claimed in claim 1 ~~or 2,~~ wherein

R^1 is (C_1-C_6)alkyl which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, (C_1-C_4)alkoxy, (C_1-C_4)alkylthio, (C_1-C_4)alkylsulfinyl, (C_1-C_4)alkylsulfonyl, [(C_1-C_4)alkyl]carbonyl, [(C_1-C_4)alkoxy]carbonyl, (C_2-C_4)alkenyl, (C_2-C_4)alkynyl,

(C_3-C_6)cycloalkyl, phenyl, where each of the last-mentioned 10 radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C_1-C_4)alkoxy, (C_1-C_4)alkylthio and, in the case of cyclic radicals, also (C_1-C_4)alkyl and (C_1-C_4)haloalkyl,

or

(C_3-C_6)cycloalkyl which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, (C_1-C_4)alkyl, (C_1-C_4)alkoxy, (C_1-C_4)alkylthio, (C_1-C_4)alkylsulfinyl, (C_1-C_4)alkylsulfonyl, [(C_1-C_4)alkyl]carbonyl, [(C_1-C_4)alkoxy]carbonyl, (C_2-C_4)alkenyl, (C_2-C_4)alkynyl, (C_3-C_6)cycloalkyl, phenyl, where each of the last-mentioned 11 radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C_1-C_4)alkoxy, (C_1-C_4)alkylthio and, in the case of cyclic radicals, also (C_1-C_4)alkyl and (C_1-C_4)haloalkyl, and

R^2, R^3 in each case independently of one another are hydrogen, amino, (C_1-C_6)alkyl, (C_1-C_4)alkylamino, di[(C_1-C_4)alkyl]amino, (C_1-C_4)alkyloxy, (C_3-C_6)cycloalkyl, (C_1-C_4)alkyl]carbonyl, [(C_1-C_4)alkoxy]carbonyl, phenylcarbonyl, phenoxycarbonyl, (C_1-C_4)alkylsulfonyl, phenylsulfonyl or a heterocyclyl radical having 3 to 6 ring atoms and 1 to 3 hetero ring atoms selected from the group consisting of N, O and S, where phenyl in the abovementioned radicals or the heterocyclyl radical independently of one another are unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, (C_1-C_4)alkoxy, (C_1-C_4)alkyl, and (C_1-C_4)haloalkyl, or

R^2, R^3 together with the nitrogen atom of the group NR^2R^3 is a heterocyclic radical which has 3 to 6 ring atoms and 1 to 3 hetero ring atoms, where, in addition to the nitrogen atom, the other hetero ring atoms which may be present are selected from the group consisting of N, O and S and the heterocycle is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, (C_1-C_4)alkoxy,(C_1-C_4)alkyl and (C_1-C_4)haloalkyl.

A 4. The process as claimed in ~~any of claims 1 to 3,~~ Claim 1 wherein a chlorinating agent selected from the group consisting of chlorine, salts of hypochlorous acid, phosphorus pentachloride, phosphoryl chloride and thionyl chloride is employed.

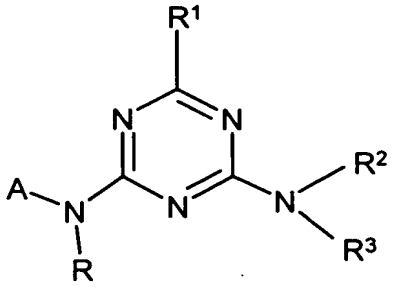
A 5. The process as claimed in ~~any of claims 1 to 4,~~ Claim 1 wherein the chlorinating agent is employed in an amount of 1 to 100 equivalents based on the compound of the formula (II).

A 6. The process as claimed in ~~any of claims 1 to 5~~, Claim 1 which is carried out in the presence of an aprotic or essentially anhydrous protic solvent or mixtures of these.

Sub A B2 7. The process as claimed in ~~any of claims 1 to 6,~~ Claim 1 which is carried out at temperatures between -40°C and the boiling point of the solvent in question.

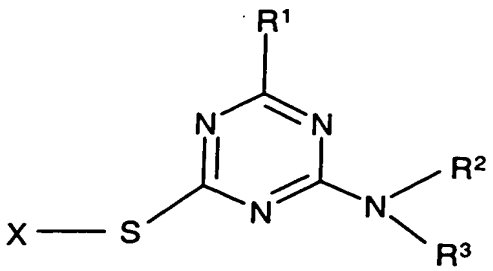
A 8. The process as claimed in ~~any of claims 1 to 7~~, Claim 1 which is carried out at temperatures between 0°C and 50°C.

9. A process for the preparation of a herbicidal aminotriazine of the formula (IV) or a salt thereof,



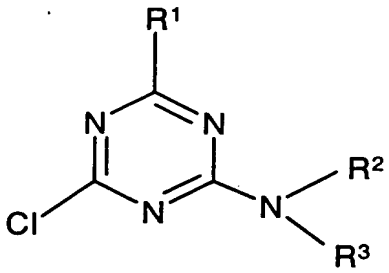
(IV)

which comprises chlorinating a 2-amino-4-thio-1,3,5-triazine of the formula (II)



(II)

to give a compound of the formula (I)



(I)

and reacting the resulting compound of the formula (I) with an amine of the formula (III)

A-NH-R (III)

to give the herbicidal aminotriazine of the formula (IV),
where in formulae (I), (II), (III) and (IV), the radicals R^1, R^2, R^3 and X are as defined in ~~any of claims 1 to 3~~ Claim 1 and A and R are organic radicals which in conjunction with the residual molecular structure of the formula (IV) constitute the chemical structure of a herbicidally active aminotriazine.

10. The process as claimed in claim 9, wherein A is a $(C_1$-$C_6)$alkylene chain which is substituted in the α-position relative to the amino group by an unsubstituted or substituted alkyl radical and in the ω-position by an optionally substituted aryl, heteroaryl, aryloxy or heteroaryloxy radical and which is further unsubstituted or additionally contains further substituents selected from the group consisting of halogen, alkyl, alkoxy and hydroxyl, and

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R is hydrogen or alkyl.

11. The use of a compound of the formula (I) or a salt thereof obtained by the process as claimed in any of claims 1 to 8 for the preparation of bioactive substances from the chemical class of the aminotriazines, preferably the herbicidal aminotriazines.

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